# Blu-ray Disc Player BDP2900/77/78

Service
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# Service Manual

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**Version 1.0**

PHILIPS

## 11 Specifications

Specifications are subject to change without notice

Playable media
- BD-Video, BD 3D
- DVD-Video, DVD+R/+RW, DVD-R/-RW, DVD+R/-R DL (Dual Layer)
- VCD/SVCD
- Audio CD, CD-R/CD-RW, MP3 media, WMA media, JPEG iles
- DivX (Ultra)/DivX Plus HD media, MKV media
- USB storage device

File format
- Video: .avi, .divx, .mp4, .mkv
- Audio: .mp3, .wma, .wav
- Picture: .jpg, .gif, .png

Video
- Signal system: PAL / NTSC
- HDMI output 480i/576i, 480p/576p, 720p, 1080i, 1080p, 1080p/24Hz

Audio
- Digital output: 0.5 Vp-p (75 ohm)
  - Coaxial
- HDMI output
- Sampling frequency:
  - MP3: 32 kHz, 44.1 kHz, 48 kHz
  - WMA: 44.1 kHz, 48 kHz
- Constant bit rate:
  - MP3: 112 kbps - 320 kpbs
  - WMA: 48 kpbs - 192 kpbs

USB
- Compatibility: Hi-Speed USB (2.0)
- Class support: USB Mass Storage Class
- File system: FAT16, FAT32
- Support HDD (a portable hard drive disc): an external power source may be needed.

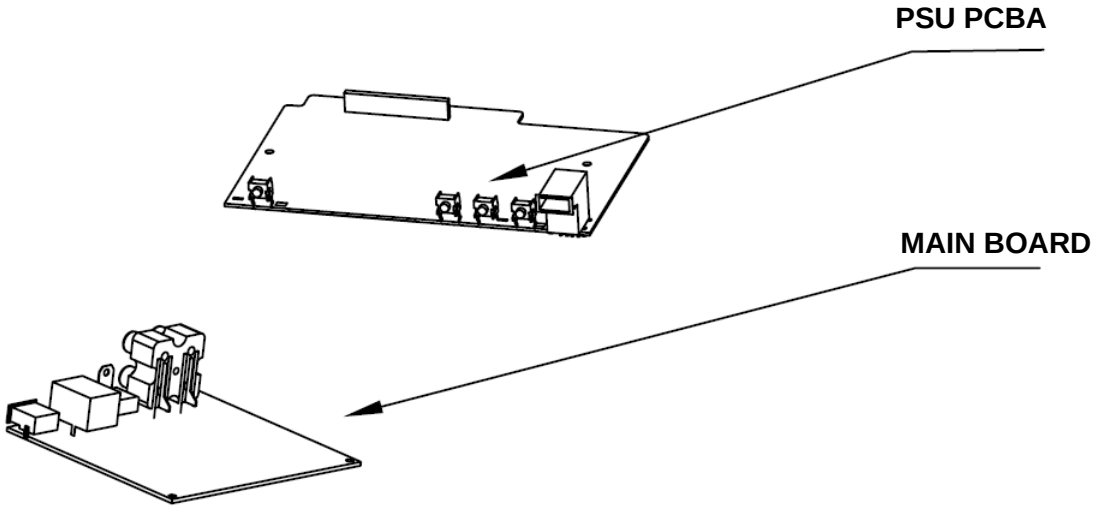
Main unit
- Power supply rating: AC 110-127V, 50Hz- 60Hz
- Power consumption: 11 W
- Power consumption in standby mode: < 1 W
- Dimensions (w x h x d): 310 X 40 X 203 (mm)
- Net Weight: 1.1 kg

Accessories supplied
- Remote control and 2 AAA batteries
- User manual

Optional accessory
- A wireless Philips USB adaptor(named WUB1110,sold separately)
- Multimedia connections:Wi-Fi 802.11b/g/n
- Connectivity: USB
- Ambient temperature:5 degC to 40 degC
- Dongie dimensions (W X H X D):28.4 X 82 X13.4mm

Laser Specification
- Laser Type (Diode): AlGaInN (BD), AlGaInP (DVD/CD)
- Wave length: 405+7nm/-7nm (BD), 660+4nm/-10nm (DVD), 790+6/-6nm (CD)
- Output power: 1mW (BD), 0.3mW (DVD), 0.28mW (CD)

## 1.1 PCBs Location




**VERSION VARIATIONS**

| Type/Versions: / Service policy / Board in used: | BDP2900 | | | | | | |
|---|---|---|---|---|---|---|---|
| | 77/78 | | | | | | |
| MAIN BOARD | M | | | | | | |
| PSU PCBA | M | | | | | | |

***TIPS: C -- Component Lever Repair.**
**M -- Module Lever Repair**
**X -- OCX**

# Software check and upgrade

## Preparation to upgrade software

1)Start the CD burning software & create a folder named "UPGAL"

2)Then copy the Bin file (BDP3XXXXX-XXX-XXXXXX.bin) into it,

3)Burn the data onto the blank CD.

**A. Procedure for software upgrade**

**A) Upgrade software via Disc**

1) Power on the set and insert the prepared Upgrade CDR.

2) The set will starts reading disc & response with the following display TV screen:

Now searching for upgrade software!

Please wait…!

3) Then screen will display :

software upgrades for this player has been found!Do you want to upgrade?

Cancel Start

4) Press Right cursor button to choose "Start", then press <OK>;

5) The software will updagrde and screen will display as below:

Upgrade is ongoing, Please wait…

Please do not unplug or switch off the device.

6) Restart the set.

**B) Update software via USB Flash Drive:**

1) Go to www.philips.com/support to check if the latest software version is available for this player.

2) Download the software onto a USB flash drive's root DIR named "UPGAL"

3) Insert the USB flash drive to the USB jack of the rear panel.

4) In the Home menu, select <Setup>-<Advanced>-<Software update>-<USB>.

5) Then press OK

6) youll see now searching for new software, please wait.....

7) Waiting, the youll see "software for this player has been found ....."

8) Then select "Start" and press "OK"

9) then youll see "upgrade is ongoing .....", wait until it ends.

10) Player will restart automatically or press "Restart now" to restart, after restarting the upgrade ends.

**B. Read out the software versions to confirm upgrading**

4) In homemenu,enter "setup"->"advanced"->"version info", press "OK"

and other information will display on the TV screen as below:

Model:XXX.XXX

Versions

subinfo:xxxx

system SW:xxxx

ethernet MAC:xxxxxxxx

http://www.philips.com/support

Caution: The set must not be power off during upgrading, otherwise the Main board will be damaged entirely.

# 2.0 Safety instruction

1. General safety

Safety regulations require that during a repair:

. Connect the unit to the mains via an isolation transformer.

. Replace safety components indicated by the symbol

Only by components identical to the original ones. Any

Other component substitution (other than original type)

May increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must

Return the unit in its original condition. Pay, in particular,

Attention to the following points:

. Route the wires/cables correctly, and fix them with the

mounted cable clamps

. Check the insulation of the mains lead for external Damage

. Check the electrical DC resistance between the mains

Plug and the secondary side:

1) Unplug the mains cord, and connect a wire between
   The two pins of the mains plug.
2) Set the mains switch the “on” position (keep the
   Mains cord unplug).
3) Measure the resistance value between the mains
   plug and the front panel, controls, and chassis bottom.
4) Repair or correct unit when the resistance measurement is less than 1M Ω
5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
6) Switch the unit “off”, and remove the wire between
   the two pins of the mains plug.

2. Laser safety

This unit employs a laser. Only qualified service personnel

May remove the cover, or attempt to service this device

(due to possible eye injury).

Laser device unit

Type :Semiconductor laser GaAlAs

Wavelength :650nm (DVD)

:780nm (VCD/CD)

Output power :7mW(DVD)

:10mW(DVD/CD)

Beam divergence:60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

## 3.0 Instruction for Use

You can download this information from the following websites:

http://www.philips.com/support
http://www.p4c.philips.com

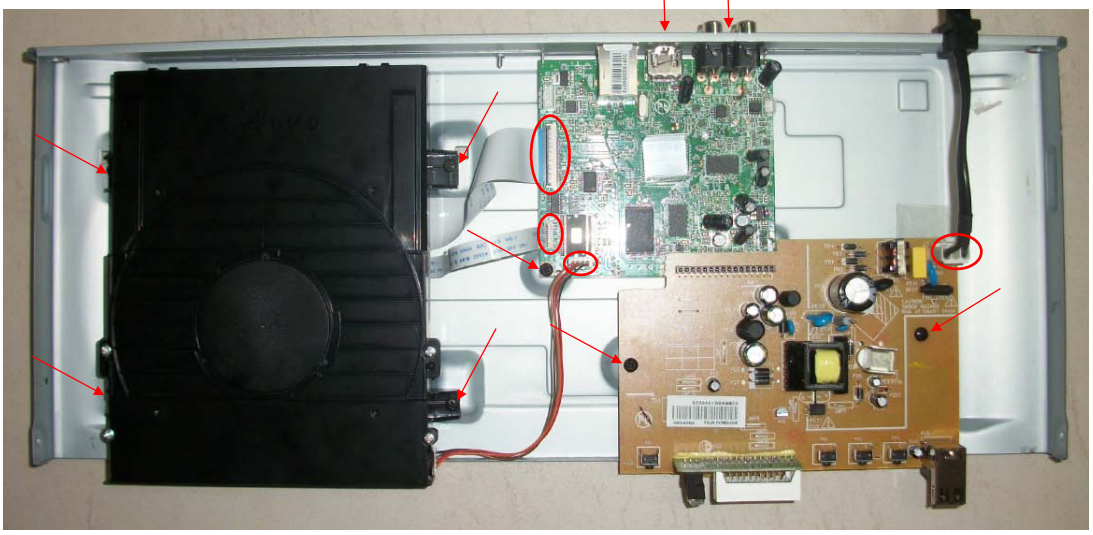
## 4.0 MECHANICAL AND DISMANTLING INSTRUCTIONS

The following guidelines show how to dismantle the player.

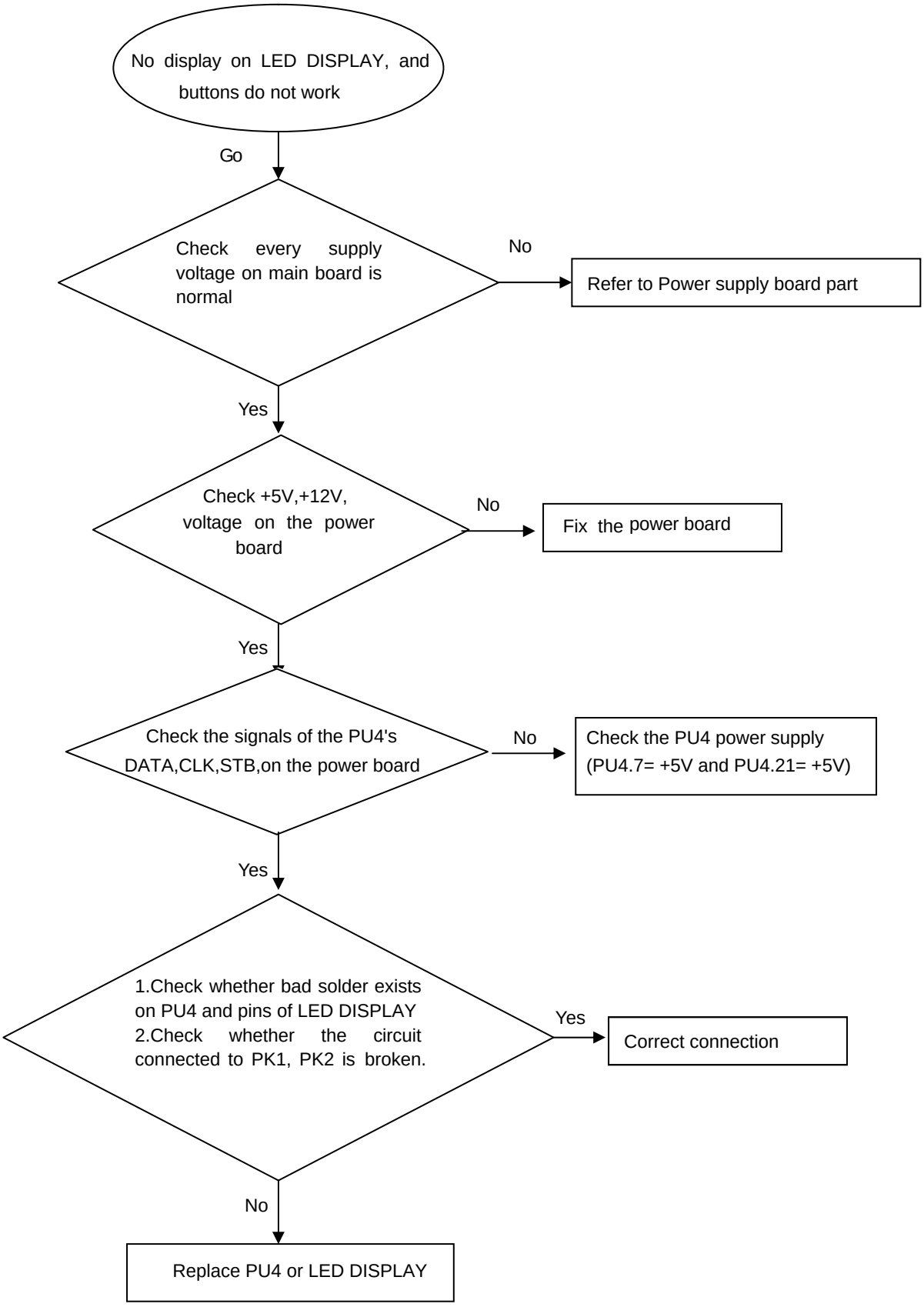
Step1: Remove 3 screws around the Top Cover, and then remove the Top Cover

Step2: Dismantling Front Panel,the CD door should be removed first, then gently pull the Panel out from the set.
use an acuate press the reset hole to release the disc tray;remove the door from the tray;
PS: insert reset hole once the disc tray jammed

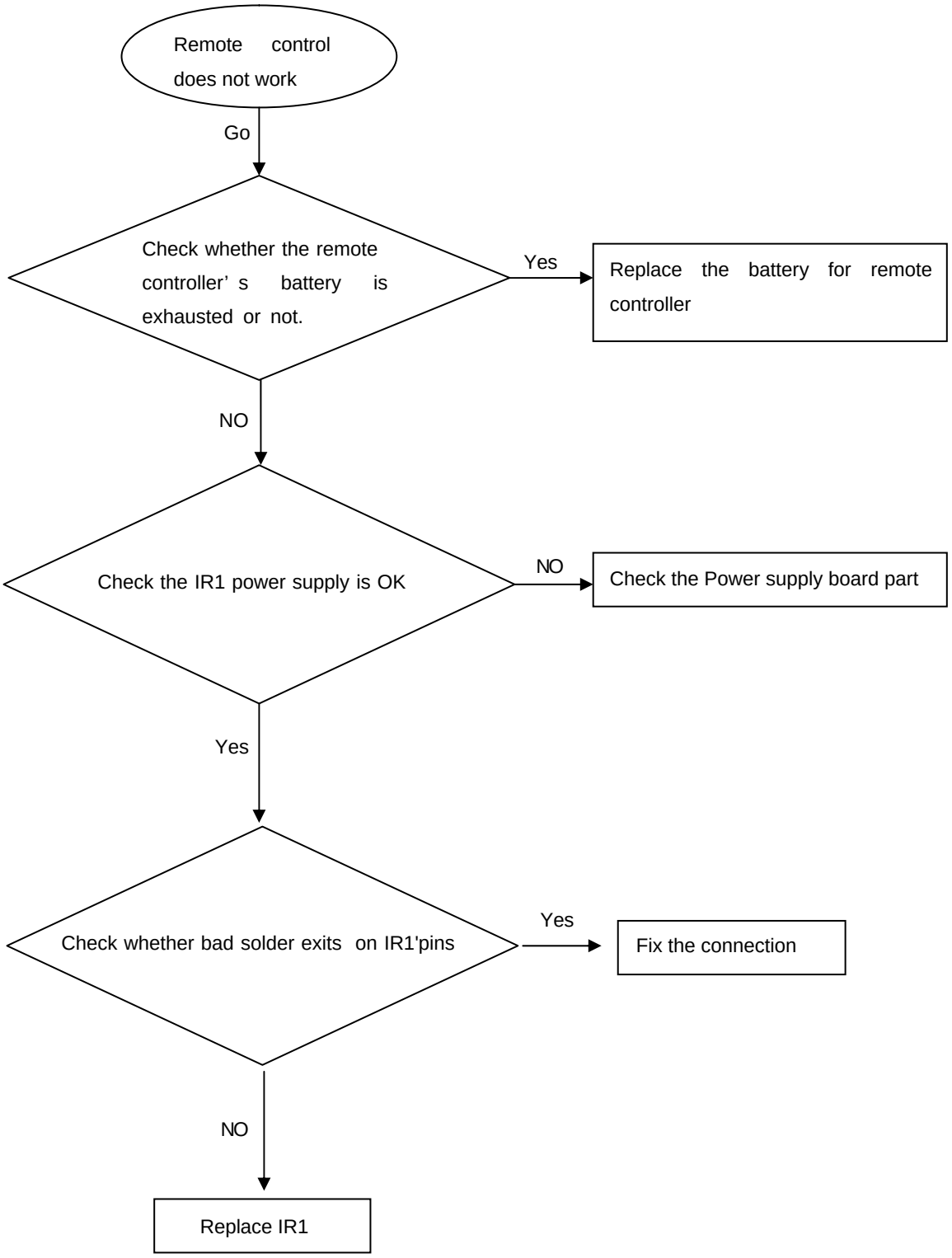
Step3: Remove the 9 screws on board to dismantle the DVD BOARD & PSU BOARD & DECK



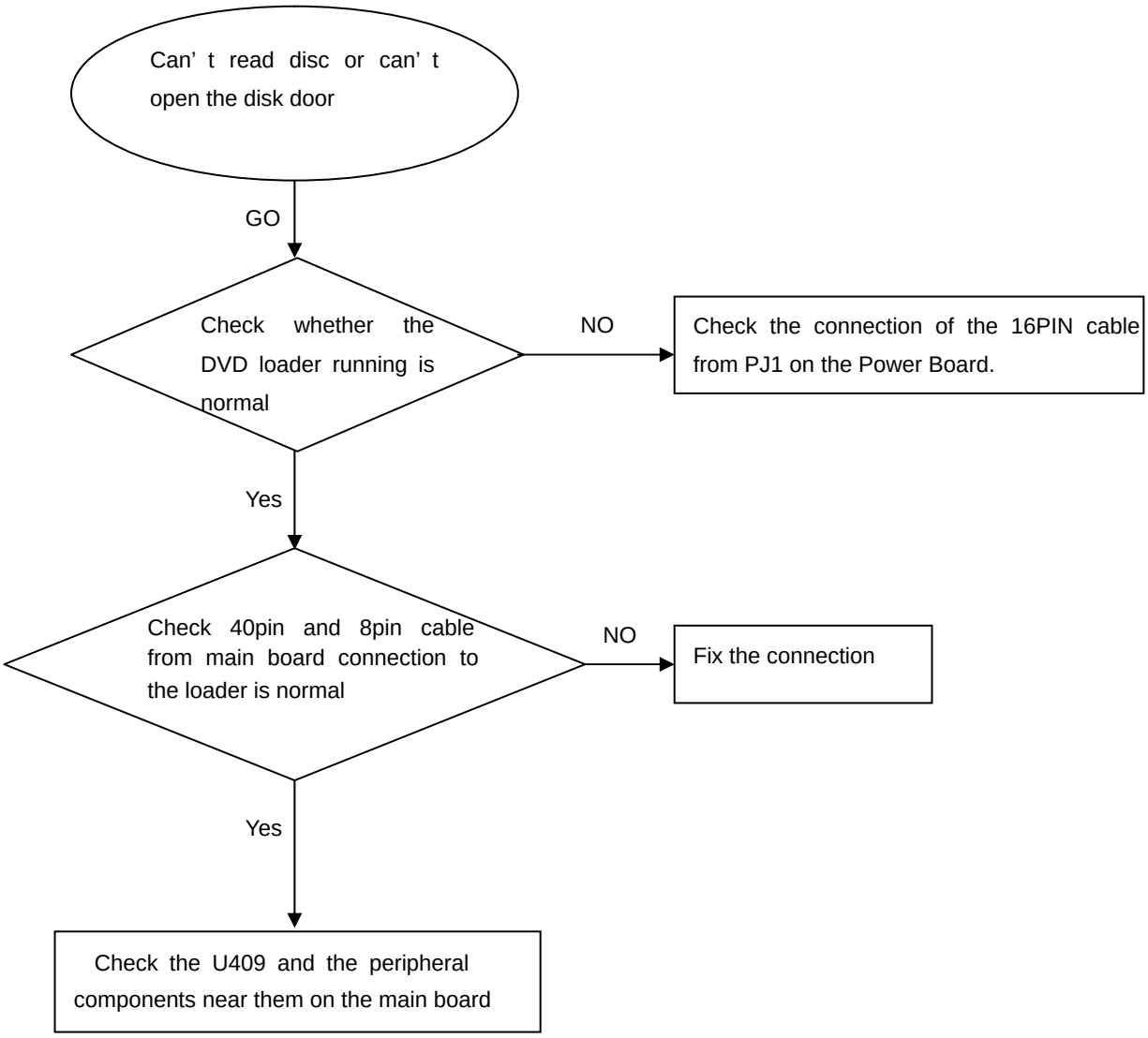
No display , and buttons do not work

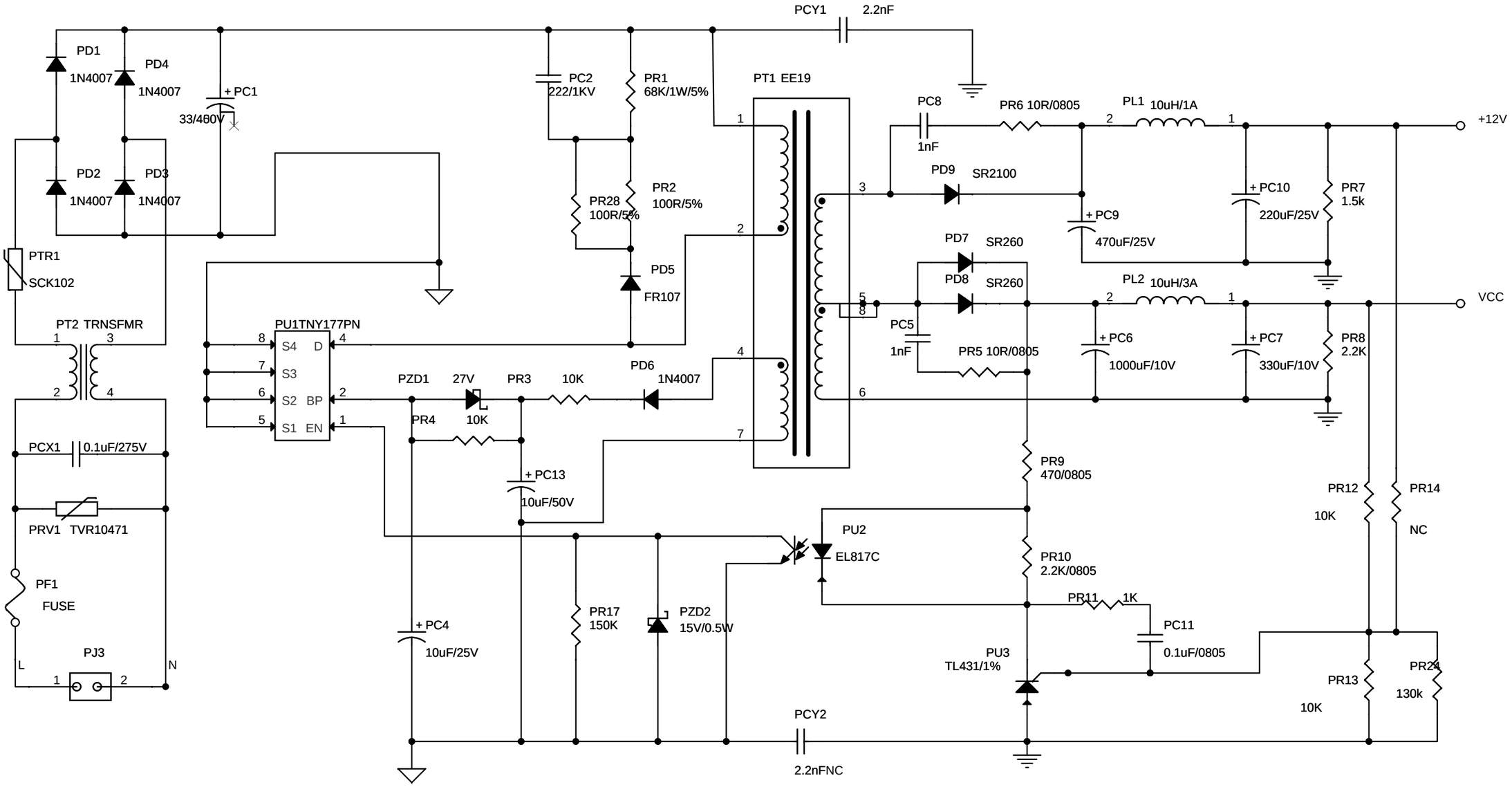

No display on LED DISPLAY, and buttons do not work
Go
Check every supply voltage on main board is normal
No
Refer to Power supply board part
Yes
Check +5V,+12V, voltage on the power board
No
Fix the power board
Yes
Check the signals of the PU4's DATA,CLK,STB,on the power board
No
Check the PU4 power supply (PU4.7= +5V and PU4.21= +5V)
Yes
1.Check whether bad solder exists on PU4 and pins of LED DISPLAY
2.Check whether the circuit connected to PK1, PK2 is broken.
Yes
Correct connection
No
Replace PU4 or LED DISPLAY

**Remote control does not work**



**Can’t read disc or can’t open the disk door**


Can’ t read disc or can’ t open the disk door
GO
Check whether the DVD loader running is normal
NO
Check the connection of the 16PIN cable from PJ1 on the Power Board.
Yes
Check 40pin and 8pin cable from main board connection to the loader is normal
NO
Fix the connection
Yes
Check the U409 and the peripheral components near them on the main board


PCY1
2.2nF
PD1
1N4007
PD4
1N4007
+ PC1
33/400V
PD2
1N4007
PD3
1N4007
PTR1
SCK102
PT2 TRNSFMR
PCX1
0.1uF/275V
PRV1 TVR10471
PF1
FUSE
PJ3
L
N
PC2
222/1KV
PR1
68K/1W/5%
PR28
100R/5%
PR2
100R/5%
PD5
FR107
PT1 EE19
PC8
1nF
PR6 10R/0805
PL1 10uH/1A
+12V
PD9
SR2100
+ PC9
470uF/25V
+ PC10
220uF/25V
PR7
1.5k
PD7
SR260
PD8
SR260
PL2 10uH/3A
VCC
PC5
1nF
PR5 10R/0805
+ PC6
1000uF/10V
+ PC7
330uF/10V
PR8
2.2K
PU1TNY177PN
S4 D
S3
S2 BP
S1 EN
PZD1
27V
PR3
10K
PR4
10K
PD6
1N4007
+ PC13
10uF/50V
PR9
470/0805
PR12
10K
PR14
NC
PU2
EL817C
PR10
2.2K/0805
PR11
1K
PC11
0.1uF/0805
PU3
TL431/1%
PR13
10K
PR24
130k
+ PC4
10uF/25V
PR17
150K
PZD2
15V/0.5W
PCY2
2.2nFNC

IR_MS-C2FN61NL IR1
DET GND VCC
1 2 3
GND
IR
PC14
100pF
VCC
PR20
100R
PC12
100uF/10V

DATA
D4
LED

D1 D2
D1 D2
USBM0 USBP0
USB-VCC
USBP0
USBM0
1:GND
2:D+
3:D-
4:VCC
PJ6
USB/DIP
USB-SERIES-4PA
PC15
220uF/10V

PK1 POWER
POWER
PK2 OPEN/CLOSE
2OPEN/CLOSE

PJ1
19 +12V
18 DATA
17
16 CLK
15 STB
14 DATA
13 GND
12 IR
11 POWER
10 OPEN/CLOSE
9 USB-VCC
8 USBM0
7 USBP0
6 GND
5 VCC
4 VCC
3 GND
2 GND
1 +12V
VCC
+12v
DIP2.0-14BDP
16PIN

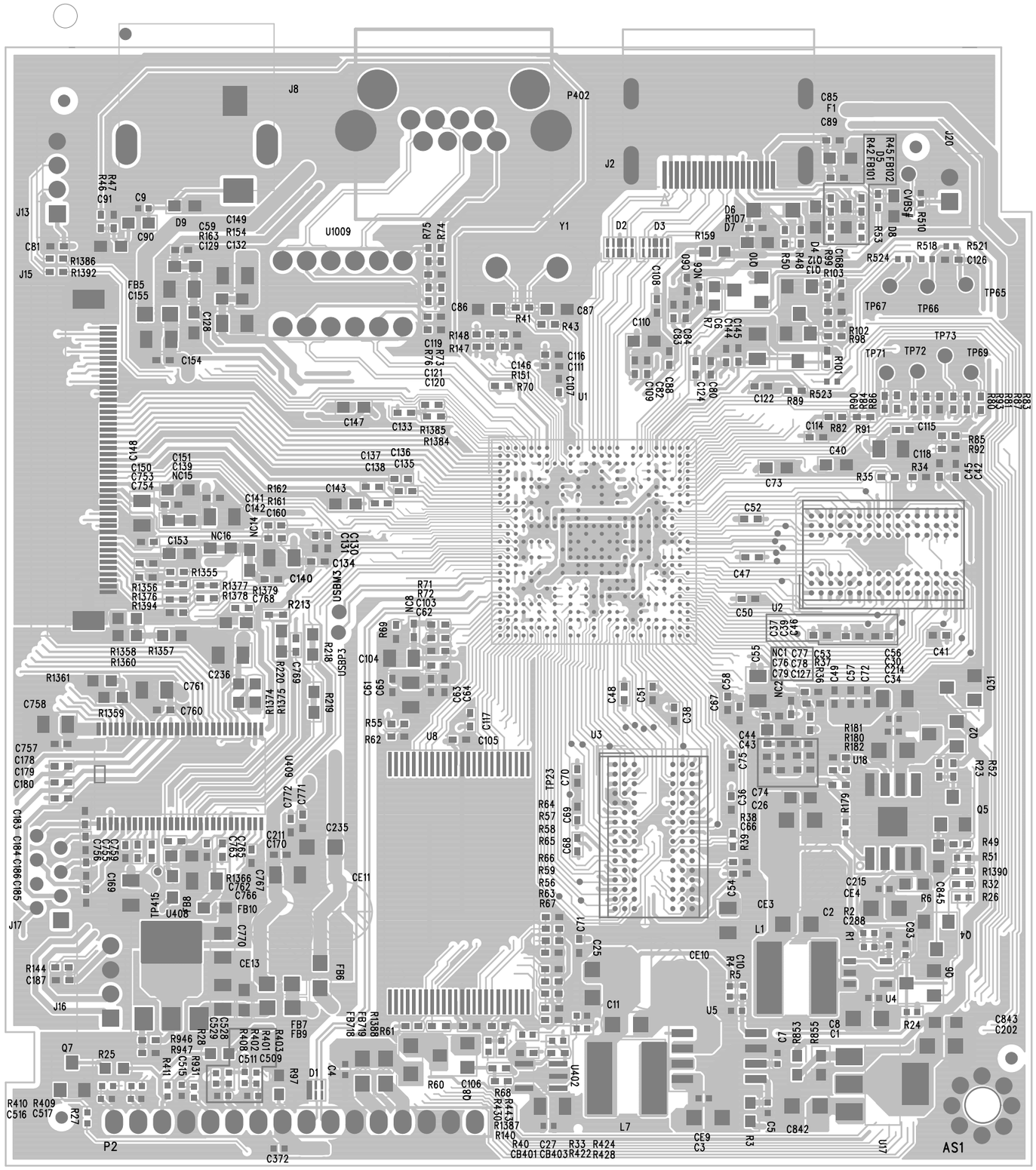
VCC
PC16
100uF/10V
PR21 10K
PR18 10K
PR19 10K
PR22 51K

PU4
DATA
CLK
STB
INT
DI/O
CLK
STB
KEY1
KEY2
Vdd
GND
Grid1
Grid2
GND
Grid3
Grid4
GND
VDD
Seg1/KS1
Seg2/Ks2
Seg3/Ks3
Seg4/Ks4
Seg5/Ks5
Seg6/Ks6
Seg7/Ks7
Seg14/Grid5
Seg13/Grid6
Seg12/Grid7
Seg10/Ks10
Seg9/Ks9
Seg8/Ks8
SM1628
PC18
0.1uF
VCC

PJ4
A1 A2 A3 A4 A5 A6 A7 B1 B2 B3 B4 B5 B6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
13PA-2.54MM

PJ2
A1 A2 A3 A4 A5 A6 A7 B1 B2 B3 B4 B5 B6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
13PA-2.0MM

R4 0R/0805
PR25 0R/0805
PR27 0R/0805


J8
P402
J2
J20
J13
J15
J17
J16
P2
AS1
U1009
Y1
U1
U2
U3
U4
U5
U8
U18
U402
U408
C85
F1
C89
CVBS#
R510
R45
FB102
R42
FB101
D5
D8
R53
D6
R107
D7
D2
D3
R159
R50
R48
D4
D12
D13
R99
R103
C168
R524
R518
R521
C126
TP65
TP66
TP67
TP71
TP72
TP73
TP69
R102
R98
R101
C108
C90
C91
C83
C6
C7
C144
C145
C110
C88
C82
C109
C124
C80
C122
R89
R523
R90
R88
R84
R86
R83
R87
R81
R93
R80
C114
R82
R91
C115
C40
C118
R34
R35
C73
C45
C42
R85
R92
C52
C47
C50
C55
C58
C67
C48
C51
C38
C41
C56
C30
C214
C34
C53
C49
C57
C72
R37
R36
C77
C78
C127
C76
C79
NC1
NC2
C31
C2
R181
R180
R182
C44
C43
C75
C74
C26
C36
C38
C66
R39
C54
C215
CE4
CE3
C845
R6
C93
R2
C288
R1
C2
L1
C25
CE10
C10
R4
R5
C11
C7
R853
R855
C8
C1
R24
C843
C202
C842
C5
R3
L7
CE9
C3
R40
CB401
C27
CB403
R33
R422
R424
R428
U17
Q2
R92
R23
Q5
R49
R51
R1390
R32
R26
Q4
Q6
R64
R57
R58
R65
R66
R59
R56
R63
R67
TP23
C70
C69
C68
C71
R179
C61
C65
C104
R69
C63
C64
C117
C105
R55
R62
C103
C62
NC3
R71
R72
R74
R75
C121
C120
R76
R73
C119
C86
C87
R41
R43
R148
R147
C146
R151
R70
C116
C111
C107
C147
C133
R1385
R1384
C137
C136
C138
C135
C143
C148
C150
C753
C754
C151
C139
NC15
C141
C142
R162
R161
C160
NC14
C153
NC16
C130
C131
C134
USBD3
R1355
C140
R1356
R1376
R1394
R1377
R1378
R1379
C768
R213
R1358
R1357
R1360
R1361
C758
C236
C761
R1359
C760
R218
R220
R1375
R1374
C769
R219
C757
C178
C179
C180
C183
C184
C186
C185
C759
C758
C756
C763
C762
C764
C765
C211
C770
C772
C771
C235
CE11
C767
C766
R1366
FB10
C769
TP415
BB8
C770
CE13
FB6
R144
C187
C528
C529
R28
R946
R947
C515
R931
R411
R403
R401
R402
R408
C511
C509
FB7
FB9
R1388
FB719
FB718
R61
R60
C106
R68
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R140
R97
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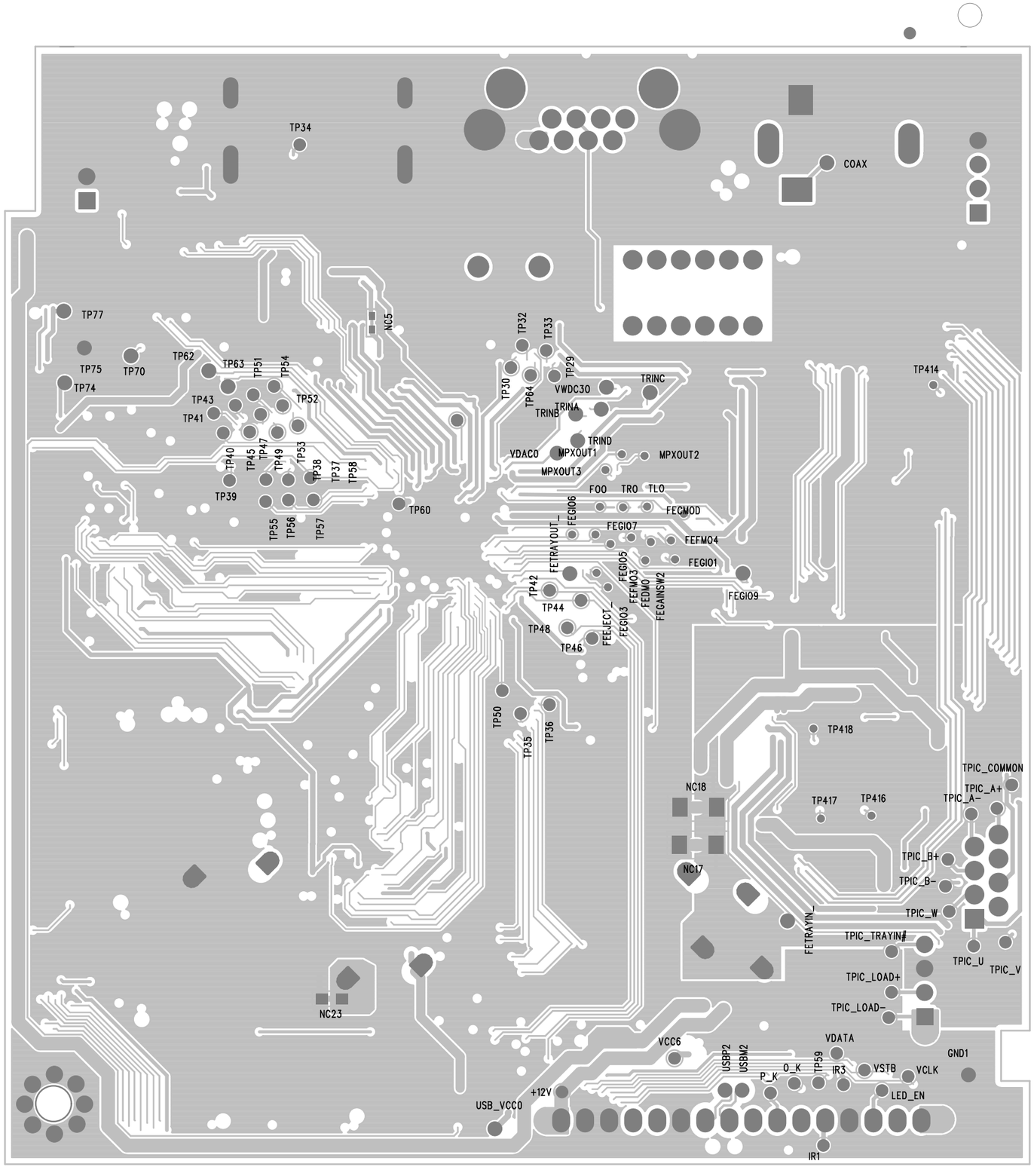
C4
R25
Q7
R27
R410
R409
C516
C517
C372


TP34
COAX
TP77
TP75
TP70
TP74
TP62
TP63
TP51
TP54
TP43
TP41
TP52
TP40
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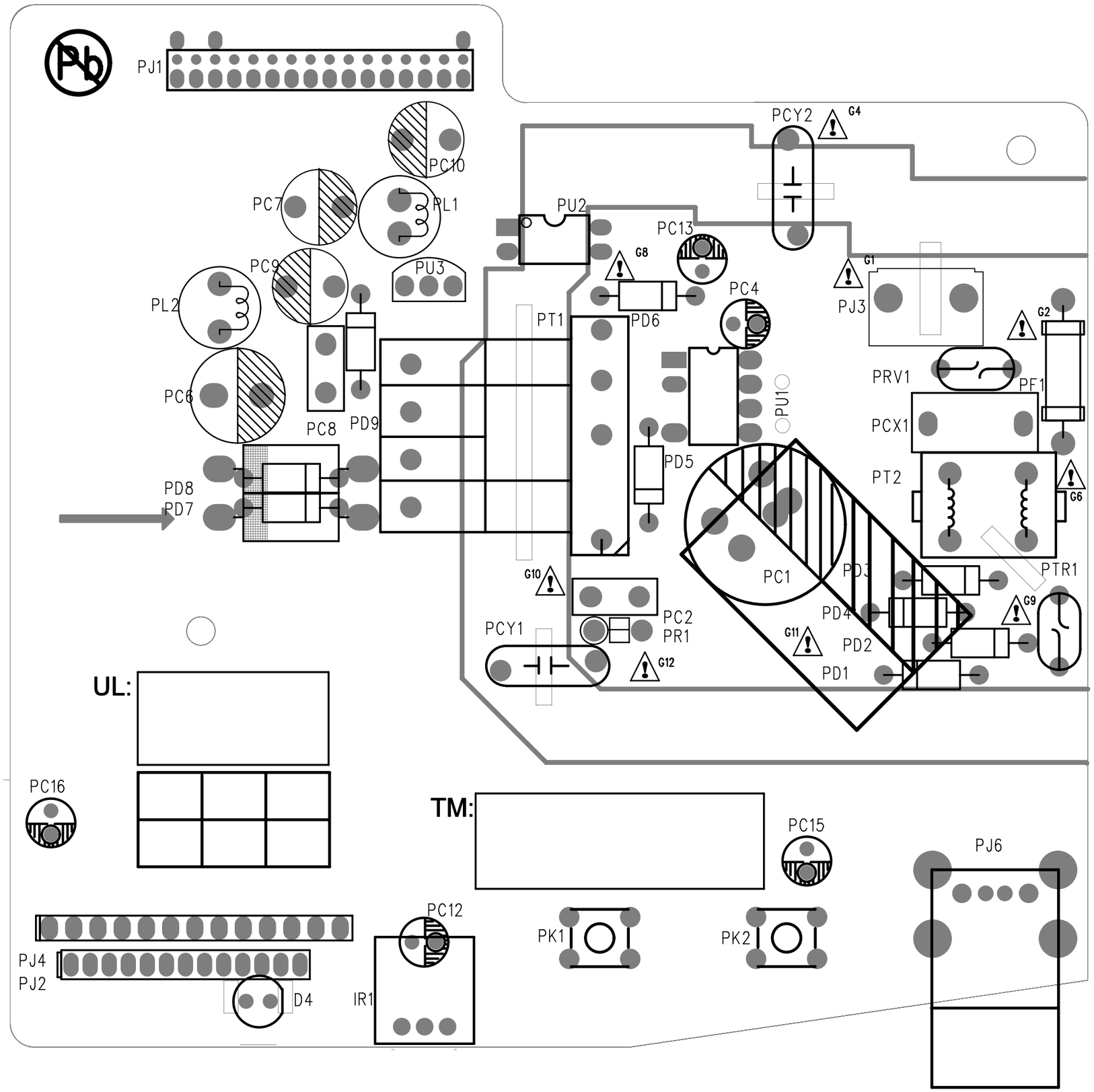
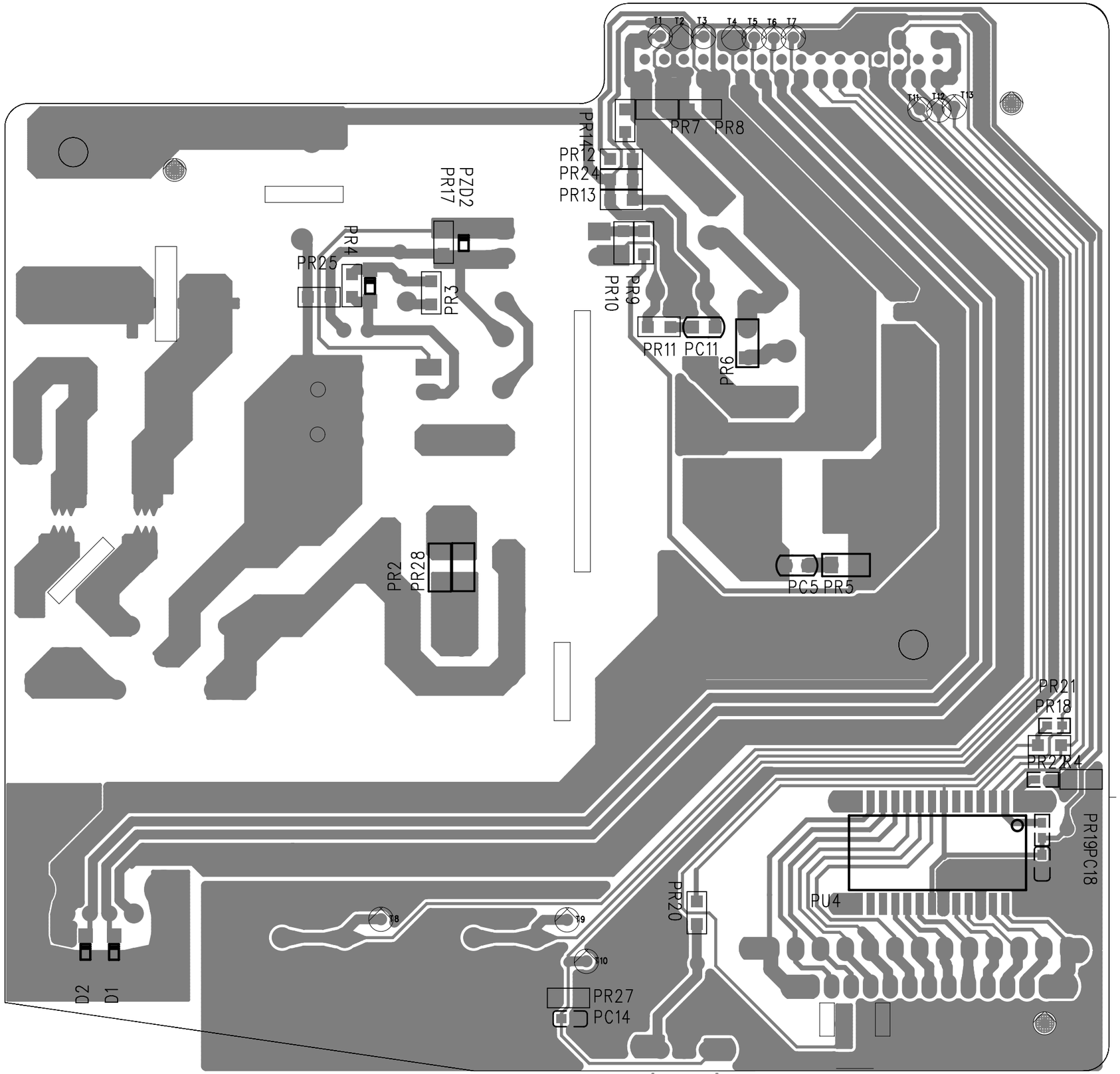
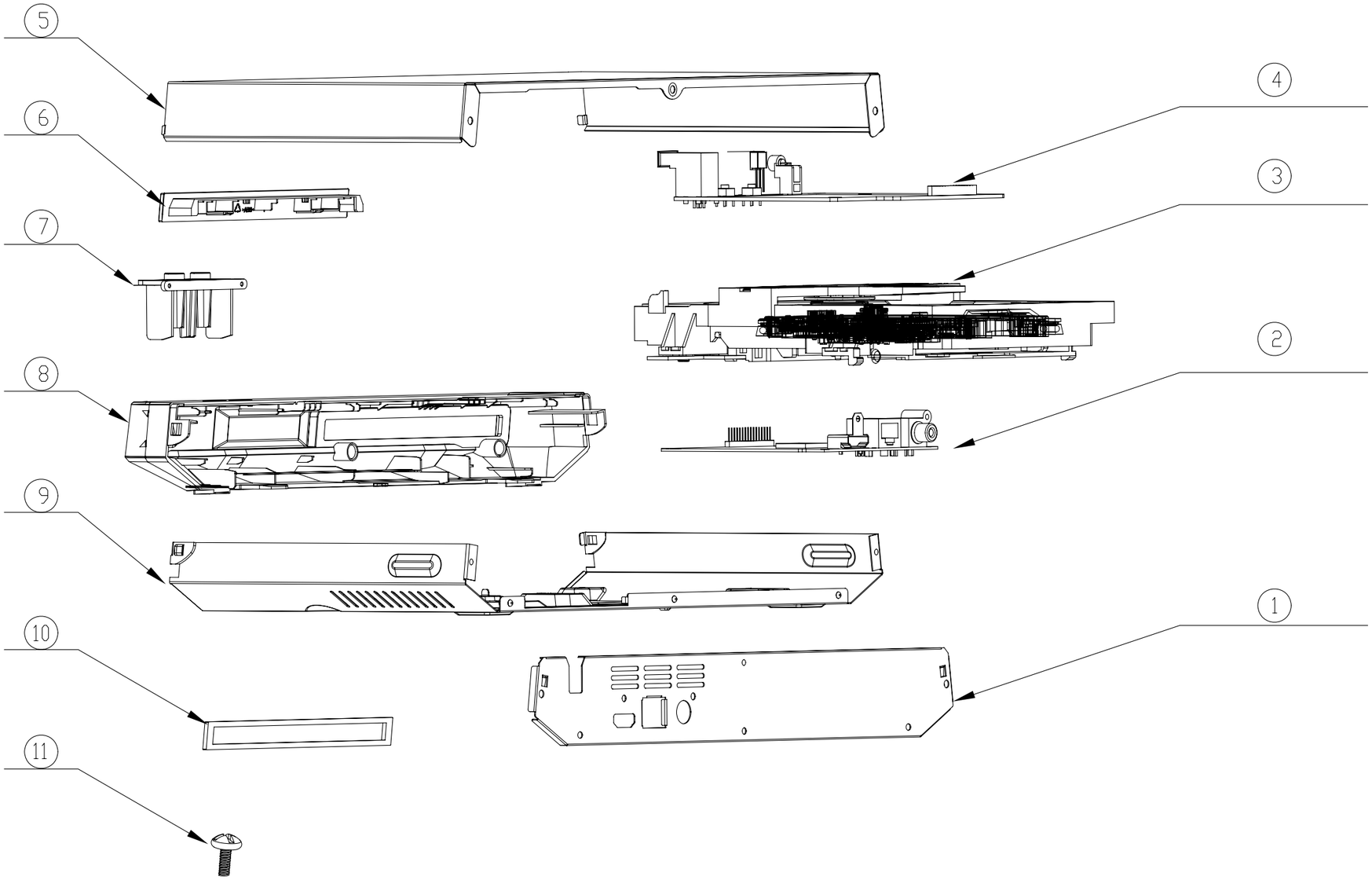
TP47
TP49
TP53
TP38
TP37
TP58
TP39
TP60
TP55
TP56
TP57
NC5
TP32
TP33
TP30
TP64
TP29
VWDC30
TRINC
TRINA
TRINB
TRIND
VDAC0
MPXOUT1
MPXOUT2
MPXOUT3
FOO
TRO
TLO
FECMOD
FEGIO6
FEGIO7
FEFMO4
FEGIO1
FEGIO9
FETRAYOUT_
FEGIO5
FEGIO3
FEFMO3
FEDMO
FEGAINSW2
FEEJECT_
TP42
TP44
TP48
TP46
TP50
TP35
TP36
TP414
TP418
TP417
TP416
NC18
NC17
NC23
TPIC_COMMON
TPIC_A+
TPIC_A–
TPIC_B+
TPIC_B–
TPIC_W
TPIC_TRAYIN#
TPIC_U
TPIC_V
TPIC_LOAD+
TPIC_LOAD–
FETRAYIN
VCC6
USBP2
USBM2
VDATA
GND1
O_K
P_K
TP59
IR3
VSTB
VCLK
LED_EN
+12V
USB_VCC0
IR1


PJ1
PCY2
G4
PC10
PC7
PL1
PU2
PC13
G8
G1
PC9
PU3
PC4
PJ3
PL2
PT1
PD6
G2
PRV1
PC6
PC8
PD9
PU1
PF1
PCX1
PD5
PT2
G6
PD8
PD7
G10
PC1
PD3
PTR1
PC2
PR1
G9
PD4
PCY1
G11
PD2
G12
PD1
UL:
PC16
TM:
PC15
PJ6
PC12
PK1
PK2
PJ4
PJ2
D4
IR1

PSU PCB - BOTTOM

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2
1

## 9.0 REVISION LIST

Version 1.0

- Initial release